

WHAT IS CLAIMED IS:

1. A method of reducing a blood flow into a perigraft space between an endovascular graft and a body lumen wall, the method comprising:

accessing the perigraft space with a delivery device; and  
delivering an embolic material into the perigraft space with the delivery

5 device,

wherein the embolic material comprises polyethylene glycol diacrylate, pentaerthritol tetra 3(mercaptopropionate), and a buffer.

2. The method of claim 1 comprising identifying a flow path of the embolic material within the perigraft space prior to delivering the embolic material into the  
10 perigraft space.

3. The method of claim 2 wherein identifying a flow path of the embolic material within the perigraft space comprises:

introducing a contrast fluid into the perigraft space; and  
monitoring a flow pattern of the contrast fluid within the perigraft space.

15 4. The method of claim 1 comprising reducing a blood flow through the endovascular graft prior to delivery of the embolic material into the perigraft space.

5. The method of claim 4 further comprising:

introducing a contrast fluid into the perigraft space;  
monitoring a flow pattern of the contrast fluid within the perigraft space; and  
20 allowing the contrast fluid to substantially dissipate from the space between

the endovascular graft and the body lumen wall by temporarily restoring blood flow through the endovascular graft.

6. The method of claim 4 wherein reducing the blood flow is carried out with an occlusion member that is positioned upstream of the endovascular graft.

25 7. The method of claim 6 wherein the occlusion member is an expandable balloon,

wherein reducing the blood flow through the endovascular graft comprises inflating the expandable balloon within the body lumen.

8. The method of claim 4 further comprising restoring the blood flow through the endovascular graft after the embolic material has substantially cured.

9. The method of claim 8 wherein the embolic material has a first viscosity upon delivery into the perigraft space and a solidifies after the embolic material has substantially cured.

10. The method of claim 4 wherein delivering the embolic material while the blood flow through the endovascular graft is reduced reduces the amount of distal perfusion of the embolic material from the perigraft space.

11. The method of claim 4 wherein reducing the blood flow comprises substantially stopping the blood flow through the endovascular graft and the perigraft space.

12. The method of claim 1 wherein the embolic material is radiopaque.

13. The method of claim 12 comprising fluoroscopically monitoring the delivery of the radiopaque embolic material into the perigraft space.

14. The method of claim 1 wherein the embolic material cures *in situ* to embolize the perigraft space, wherein the embolic material contacts an outer surface of the endovascular graft and an inner surface of the body lumen wall to reduce a blood flow into the perigraft space.

15. The method of claim 1 wherein the embolic material cures in approximately one minute to approximately ten minutes.

16. The method of claim 1 wherein the embolic material of the polyethylene glycol diacrylate, pentaerythritol tetra 3(mercaptopropionate), and the buffer mixes *in vitro*.

17. The method of claim 1 wherein accessing the perigraft space comprises percutaneously positioning the delivery device in the perigraft space.

18. The method of claim 17 wherein delivering the embolic material comprises a translumbar injection of the embolic material into the perigraft space.

19. The method of claim 1 wherein the delivery device comprises a catheter with a distal tip, wherein accessing the perigraft space comprises endovascularly positioning the distal tip of the catheter between the endovascular graft and the body lumen wall.

5 20. The method of claim 1 wherein the buffer comprises glycylglycine.

21. The method of claim 20 comprising providing the glycylglycine buffer in a proportion ranging from about 5 to about 40 weight percent.

22. The method of claim 1 wherein the buffer comprises HEPES.

10 23. The method of claim 1 comprising providing the polyethylene glycol diacrylate in a proportion ranging from about 50 to about 55 weight percent.

24. The method of claim 1 wherein the polyethylene glycol diacrylate comprises a molecular weight between about 700 and about 800.

15 25. The method of claim 24 comprising providing the pentaerythritol tetra 3(mercaptopropionate) in a proportion ranging from about 0.31 to about 0.53 times weight percent of the polyethylene glycol diacrylate present.

26. The method of claim 1 further comprising adding saline or other inert biocompatible materials to the embolic material.

20 27. The method of claim 1 further comprising:  
deploying the endovascular graft in the body lumen prior to the delivery of the embolic material; and  
inflating at least a portion of the endovascular graft with an inflation fluid.

28. The method of claim 27 wherein inflating at least a portion of the endovascular graft with the inflation fluid comprises filling at least one of an inflatable cuff and a fill channel with the inflation fluid.

25 29. The method of claim 28 wherein the embolic material and the inflation fluid are the same materials.

30. The method of claim 28 wherein the embolic material and the inflation fluid are different materials.

31. A system for depositing an embolic material in a perigraft space between an endovascular graft and a body lumen wall, the system comprising:

5 a delivery device configured to access the perigraft space;  
an occlusion assembly that is configured to substantially reduce a blood flow through the endovascular graft; and

an embolic material that is delivered to the perigraft space with the delivery device, wherein the embolic material comprises polyethylene glycol diacrylate,  
10 pentaerythritol tetra 3(mercaptopropionate), and a buffer.

32. The system of claim 31 wherein the occlusion assembly comprises an occlusion member positioned adjacent a distal end of a guidewire.

33. The system of claim 32 wherein the occlusion member is an expandable balloon.

15 34. The system of claim 31 wherein the delivery device comprises a syringe.

35. The system of claim 31 wherein the delivery device comprises a catheter.

36. The system of claim 31 wherein the embolic material is radiopaque.

20 37. The system of claim 37 wherein the buffer comprises glycylglycine.

38. The system of claim 37 wherein the glycylglycine buffer is in a proportion ranging from about 5 to about 40 weight percent.

39. The system of claim 37 wherein the buffer comprises HEPES.

25 40. The system of claim 37 wherein the polyethylene glycol diacrylate is in a proportion ranging from about 50 to about 55 weight percent.

41. The system of claim 37 wherein the polyethylene glycol diacrylate comprises a molecular weight between 700 and 800.

42. The system of claim 41 wherein the pentaerthritol tetra 3(mercaptopropionate) is in a proportion ranging from about 0.31 to about 0.53 times the weight percent of the polyethylene glycol diacrylate present.

43. The system of claim 37 wherein the embolic material further comprises saline or other inert biocompatible materials.

44. The system of claim 31 wherein the embolic material has a first viscosity upon delivery into the perigraft space and is a solid after the embolic material has substantially cured.

45. A kit for depositing an embolic material in a perigraft space between an endovascular graft and a body lumen wall, the kit comprises:  
a delivery device configured to access the perigraft space; and  
an embolic material comprising polyethylene glycol diacrylate, pentaerthritol tetra 3(mercaptopropionate), and a buffer.

46. The kit of claim 45 wherein the delivery device comprises a catheter.

47. The kit of claim 45 wherein the delivery device comprises a syringe and needle configured to percutaneously access the perigraft space.

48. The kit of claim 45 wherein the buffer comprises a glycylglycine buffer.

49. The kit of claim 48 wherein the glycylglycine buffer is present in a proportion ranging from about 5 to about 40 weight percent.

50. The kit of claim 45 wherein the polyethylene glycol diacrylate is present in a proportion ranging from about 50 to about 55 weight percent.

51. The kit of claim 45 wherein the polyethylene glycol diacrylate comprises a molecular weight between 700 and 800.

52. The kit of claim 51 wherein the pentaerthritol tetra 3(mercaptopropionate) is present in a proportion ranging from about 0.31 to about 0.53 times the weight percent of the polyethylene glycol diacrylate present.

53. The kit of claim 45 further comprising an occlusion member that is configured to temporarily occlude the body lumen.

54. The kit of claim 53 wherein the occlusion member is an inflatable balloon.

5 55. The kit of claim 45 wherein the buffer comprises HEPES.